MET-PRO Corporation

Delaware Valley Industrial Resource Center

Met-Pro's Lean Journey Leads to Increased Productivity

Client Profile:
Met-Pro Corporation is a manufacturer of product recovery and pollution control equipment for purification of air and liquids; fluid handling equipment for corrosive, abrasive and high-temperature liquids; and filtration and purification products.
The company's products address the world's growing need to meet more stringent emission regulations, reduce energy consumption and employ 'green' technology. Met-Pro operates 11 plants, including eight in the U.S., and one each in Canada, Holland and China. The company employs 100 people at its facility in Harleysville, Pennsylvania.

Situation:
Met-Pro Chairman, CEO and President Ray De Hont is always looking for ways to simplify and improve his company. De Nont made the decision to pursue a Lean Transformation as a way to enhance Met-Pro's ability to meet its ongoing objectives of quality, on-time delivery and low cost. "Our operating margins were good," he noted, "but we needed to sharpen our pencil. I've always been intrigued by moving things through quicker and doing only what adds value. Going Lean was a way to make our facilities more efficient, improve our cost basis, and drive down inventory." De Hont made the decision to work with the Delaware Valley Industrial Resource Center (DVIRC), a NIST MEP network affiliate, and introduce Lean throughout Met-Pro's other Philadelphia-area locations which include Keystone Filter, in Hatfield, Fybroc and Sethco, in Telford, and Strobic Air and the Met-Pro headquarters, both in Harleysville, PA.

Solution:
DVIRC began by performing Lean assessments at each of the facilities to determine the current state of operations and identify opportunities for improvement. This included a review of order processing, scheduling, setup, equipment changeovers, batching, inspection, inventory and other processes. Based on the assessments, the Fybroc and Sethco fluid handling plant was selected as the first facility to undergo a Lean Transformation. To achieve commitment and buy-in, both management and plant employees participated in a Lean overview, an introductory presentation of Lean processes, tools and benefits. Selected employees attended Lean 101 workshops which provided a more detailed understanding of Lean principals and methods. Value Stream Mapping was then performed on all of the plant production lines to determine the current process state, and goals were set for a more efficient future state.
To move processes towards future-state objectives, employees participated in Kaizen events -- intense, goal-oriented work groups focused on achieving specific reductions in the time, effort, materials and systems used to complete a task or process. Through the Kaizen events, many of the work, assembly and process areas were reorganized for maximum efficiency using visual management methods including labeling, signs, shadow boards, racks and other tools. To enhance work flow and reduce stock inventories, Kanban pull systems were implemented to control the flow of

production based on actual order demand, rather than anticipated demand. Manufacturing and assembly processes were transformed from batch production methods to cellular setups incorporating more efficient, one-piece flow methods focused on the production of one complete part before moving on to the next. Based on positive improvements in the initial Lean work, Met-Pro has begun introducing Lean methodologies to its Strobic Air facility, with work now focused on fan and plenum assembly processes. In addition, Met-Pro plans to introduce Lean to its facilities in Michigan and Indianapolis, and eventually to all office, engineering, project management and sales operations.
The company achieved higher gross margins, despite lower revenue. This is attributed to the use of Lean principles introduced by DVIRC. In one machining area, a test was performed to determine possible improvements of moving from a batch production method to a one-piece flow. The results showed that production time could be reduced 30 percent using a one-piece process. In addition, Met-Pro operators realized that the continuous flow method allowed them to catch mistakes one at a time, instead of after making multiple parts -- reducing time and costs, while improving product quality.

Results:
* Increased productivity by 25-30 percent.
* Reduced inventory by $3 million.
* Reduced lead time by 44 percent.
* Projected reduction in setup time by 15 percent.

Testimonial:
"I never got the impression that DVIRC is in it to generate money. They're more interested in how to get you to the point where you understand the Lean philosophy and methods. I find them to be upfront, objective and honest."

Ray De Hont , CEO and President